

REMARKS

In the Office Action, claims 1-55 were rejected. Claims 1, 28 and 46 have been amended. Upon entry of the amendments, claims 1-55 will remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Rejections Under 35 U.S.C. § 102

Claims 1-2, 5-23, 26-29, 32-41, 44-47 and 50-55 were rejected under 35 U.S.C. §102(e) as being anticipated by Duvillier et al., U.S. Application No. 2002/0073082, hereinafter Duvillier. Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.

Claims 1-7

Independent claim 1 was rejected as anticipated by Duvillier. Claim 1 recites a system for optimizing storage and retrieval of data. The system comprises a transfer manager component that acquires the data from an archive and assigns predetermined storage values to specified parameters that form the data structure of the acquired data, a database that stores the data acquired by the transfer manager component in accordance with the predetermined storage values, and a middle tier component that extracts the data in the database and time interpolates the data in accordance with the predetermined storage values.

The Examiner indicated that similar components were present in Duvillier. However, Duvillier does not anticipate the method of claim 1 for at least the reasons set forth below.

Claim 1 has been amended by this Response. The amendment adds that the interpolation of the data performed by the middle tier component, in accordance with the predetermined storage values, is based on time. At least these recitations are not taught by Duvillier.

Duvillier discloses an information and retrieval system that includes persistent memory configured to store object data. The object data is identified using object ID's. The information and retrieval system of Duvillier further includes a number of internal structures, which provide a variety of information storage and retrieval functions, such as the translation of logical object ID's to physical locations where the objects are stored.

The Examiner contended that Duvillier discloses storage values including a time block value. This feature is recited, for example, in claim 5, and discussed in greater detail below with respect to other independent claims. However, because claim 1 has been amended to indicate that the recited interpolation is time interpolation, here the Applicants point out that the passage referred to by the Examiner, if relevant to time at all, only indicates that the ID values of Duvillier may be time reference values. Specifically, at paragraph 0049, Duvillier states:

According to a specific implementation, the version ID values which are assigned to the various object versions in the database may represent logical time reference values. In such embodiments, the version ID values may be used to determine the relative age of one or more object versions relative to a given version ID value. For example, according to one implementation, the version ID values may be assigned in a sequential manner to all atomically committed transactions.

Clearly, the passage only indicates that the version ID values may be time reference values. Even if entries in the database were searched by version ID values that were logical time reference values, then, Duvillier would have no reason, and certainly does not teach that any time interpolation would be performed as recited in claim 1. In the present patent application, time interpolation on extracted data is performed to facilitate the display of the data in a time coherent format, so that all the data values have the same timestamp.

Because Duvillier does not disclose at least performing time interpolation of data values, the reference cannot anticipate claim 1. Accordingly, Duvillier cannot support a *prima facie* case of anticipation of claim 1. Accordingly, claim 1 and the claims depending therefrom are believed to be clearly patentable over Duvillier as well as other prior art of record.

Claims 8-11

Independent claim 8 was similarly rejected as anticipated by Duvillier. Claim 8 recites a system for optimizing storage and retrieval of change detect monitoring data. The system comprises a transfer manager component that acquires the change detect monitoring data from an archive and assigns predetermined storage values to specified parameters that form the data structure of the acquired data. The predetermined storage values comprise at least one of a time block value and a time filter value. The system further comprises a database that stores the change detect monitoring data acquired by the transfer manager component in accordance with the time block value and time filter value, and a middle tier component that extracts the change detect monitoring data in the database and interpolates the data in accordance with the time block value and time filter value.

The Examiner indicated that similar components were present in Duvillier. However, Duvillier does not anticipate the method of claim 8 for at least the reason set forth below.

As discussed above, Duvillier discloses an information and retrieval system that includes persistent memory configured or designed to store object data, wherein each object is identified by a unique object ID. In addition, each object ID may have one or more associated object versions.

First, as discussed above, Duvillier does not disclose performing interpolation of the data in accordance with a time block value or any similar time value.

In addition, Duvillier does not disclose that the predetermined storage values comprise at least one of a time block value and a time filter value. In accordance with the present application, the time block parameter and the filter parameter facilitate the querying of the data stored in the database in an efficient manner. The time block parameter is representative of a block of time and is assigned a number that represents the number of time blocks that have passed since an epoch, such as, for example, 00:00:00 1/1/1970. Therefore, in this implementation, and as described in the present application, a Date Time field of 04:00:00 1/1/1970 is assigned a value of 0 and a Date Time field of 12:00:00 1/1/1970 is assigned a value of 1. This description of time in terms of blocks allows for the use of efficient bitmap indexing.

The filter parameter is representative of a data measurement for use in interpolating at a set of fixed time intervals starting after an epoch. In accordance with the present application, filter values are applied to time intervals of 1 second, 5 seconds, 10 seconds, etc. Filter values ranging from 0–15, for example, are then applied to these time intervals. The predetermined storage values assigned to the time block and filter parameters are then used as bit map indices to improve the speed of queries to the database.

In contrast, as discussed above, Duvillier discloses that the version ID values that are assigned to the various object versions in the database may represent logical time reference values. That is, the version ID value may be used to determine the relative age of one or more object versions relative to a given version ID value (see, e.g., paragraph 0049, reproduced above).

Clearly, Duvillier does not disclose that the predetermined storage values comprise at least one of a time block value and a time filter value as those terms are used in the claims. The reference, then, cannot possibly teach and does not suggest interpolating data in accordance with the time block value and time filter value as claimed.

Because Duvillier does not disclose predetermined storage values that comprise at least one of a time block value and a time filter value, and further performing interpolation of the data in accordance with the time block value and the time filter value, the reference cannot anticipate claim 8. Accordingly, Duvillier cannot support a *prima facie* case on anticipation of claim 8. Accordingly, claim 8 and the claims depending therefrom are believed to be clearly patentable over Duvillier as well as other prior art of record.

Claims 12-14

Independent claim 12 was similarly rejected as anticipated by Duvillier. Claim 12 recites a system for optimizing storage and retrieval of change detect monitoring data. Claim 12 is similar to claim 8 in the respects discussed above. Claim 12 comprises a transfer manager component, a database and a middle tier component as disclosed in claim 8.

As discussed with respect to claim 8 above, Duvillier does not disclose predetermined storage values that comprise at least one of a time block value and a time filter value, or the interpolation of data in accordance with the time block value and the time filter value.

Because Duvillier does not disclose predetermined storage values that comprise at least one of a time block value and a time filter value, or the interpolation of data in accordance with the time block value and the time filter value, the reference cannot

anticipate claim 12. Accordingly, Duvillier cannot support a *prima facie* case on anticipation of claim 12. Accordingly, claim 12 and the claims depending therefrom are believed to be clearly patentable over Duvillier as well as other prior art of record.

Claims 15-18

Independent claim 15 was similarly rejected as anticipated by Duvillier. Claim 15 recites means for acquiring the change detect monitoring data from an archive, means for assigning predetermined storage values to specified parameters that form the data structure of the acquired change detect monitoring data, wherein the predetermined storage values comprise at least one of a time block value and a time filter value, means for storing the acquired change detect monitoring data in accordance with the time block value and time filter value, means for extracting the stored change detect monitoring data and means for interpolating the change detect monitoring data in accordance with the time block value and time filter value.

As discussed with respect to claim 8 and claim 12 above, Duvillier does not disclose predetermined storage values that comprise at least one of a time block value and a time filter value, or the interpolation of data in accordance with the time block value and the time filter value. For at least these reasons, Duvillier cannot support a *prima facie* case on anticipation of claim 15. Accordingly, claim 15 and the claims depending therefrom are believed to be clearly patentable over Duvillier as well as other prior art of record.

Claims 19-27

Independent claim 19 was similarly rejected as anticipated by Duvillier. Claim 19 recites a monitoring unit that monitors change detect data obtained by at least one sensing unit, an archive that stores the change detect monitoring data and a remote storage and retrieval site comprising a transfer manager component that acquires the change detect monitoring data from the archive and assigns predetermined storage values to specified

parameters that form the data structure of the acquired data, wherein the predetermined storage values comprise at least one of a time block value and a time filter value, a database that stores the change detect monitoring data acquired by the transfer manager component in accordance with the time block value and time filter value and a middle tier component that extracts the change detect monitoring data in the database and interpolates the data in accordance with the time block value and time filter value.

As discussed with respect to claims 8, 12 and 15 above, Duvillier does not disclose predetermined storage values that comprise at least one of a time block value and a time filter value, or the interpolation of data in accordance with the time block value and the time filter value. Thus, here again, Duvillier cannot support a *prima facie* case on anticipation of claim 19. Accordingly, claim 19 and the claims depending therefrom are believed to be clearly patentable over Duvillier as well as other prior art of record.

Claims 28-34

Independent claim 28 was similarly rejected as anticipated by Duvillier. Claim 28 recites a method for optimizing storage and retrieval of data. The method comprises acquiring the data from an archive, assigning predetermined storage values to specified parameters that form the data structure of the acquired data, storing the acquired data in a database in accordance with the predetermined storage values, extracting the data in the database and time interpolating the data in accordance with the predetermined storage values.

Claim 28 has been amended by this Response. The amendment adds that the interpolation of the data performed by the middle tier component, in accordance with the predetermined storage values, is based on time. As discussed with respect to claim 1, above, such interpolation is not taught by Duvillier. Because Duvillier does not disclose teachings that recite performing time interpolation of data, the reference cannot support a *prima facie* case of anticipation of claim 28. Accordingly, claim 28 and the claims

depending therefrom are believed to be clearly patentable over Duvillier as well as other prior art of record.

Claims 35-38

Independent claim 35 was similarly rejected as anticipated by Duvillier. Claim 35 discloses a method for optimizing storage and retrieval of change detect monitoring data. The method comprises acquiring the change detect monitoring data from an archive, assigning predetermined storage values to specified parameters that form the data structure of the acquired data. The predetermined storage values comprise at least one of a time block value and a time filter value. The method further comprises storing the acquired change detect monitoring data in a database in accordance with the time block value and time filter value, extracting the change detect monitoring data in the database and interpolating the change detect monitoring data in accordance with the time block value and time filter value.

As discussed with respect to claims 8, 12, 15 and 19 above, Duvillier does not disclose predetermined storage values that comprise at least one of a time block value and a time filter value, or the interpolation of the data in accordance with the time block value and the time filter value. As such, Duvillier cannot support a *prima facie* case on anticipation of claim 35. Accordingly, claim 35 and the claims depending therefrom are believed to be clearly patentable over Duvillier as well as other prior art of record.

Claim 39

Independent method claim 39 was similarly rejected as anticipated by Duvillier. Claim 39 is similar to claim 35 in the respects discussed above. As discussed with respect to claim 35, Duvillier does not disclose predetermined storage values that comprise at least one of a time block value and a time filter value, or the interpolation of data in accordance with the time block value and the time filter value. Thus, the reference cannot anticipate claim 39.

Claim 40

Independent claim 40 was similarly rejected as anticipated by Duvillier. Claim 40 is similar to method claims 35 and 39 in the respects discussed above.

As discussed above, with respect to claims 35 and 39, Duvillier does not disclose predetermined storage values that comprise at least one of a time block value and a time filter value, or the interpolation of data in accordance with the time block value and the time filter value. For at least these reasons, the reference cannot support a *prima facie* case on anticipation of claim 40.

Claims 46, 53, 54 and 55.

Independent claims 46, 53, 54 and 55 were similarly rejected as anticipated by Duvillier. Claims 46, 53, 54 and 55 are essentially similar to method claims 28, 35, 39 and 40 respectively, except that they recite a computer-readable medium with code for carrying out such functionality.

Claim 46 has been amended by this Response. The amendment adds that the interpolation of the data performed by the middle tier component, in accordance with the predetermined storage values, is based on time. As discussed above, with respect to claim 1 and claim 28, such interpolation is not taught by Duvillier.

Also, as discussed above, with respect to claims 28, 35, 39 and 40, Duvillier does not disclose teachings that recite performing interpolation of data in accordance with predetermined storage values, wherein the predetermined storage values that comprise at least one of a time block value and a time filter value.

Because Duvillier does not disclose interpolation of data in accordance with predetermined storage values, wherein the predetermined storage values comprise at least one of a time block value and a time filter value, the reference cannot anticipate claims 46, 53, 54 and 55. Accordingly, Duvillier cannot support a *prima facie* case on anticipation of claims 46, 53, 54 and 55.

In view of the above-noted distinctions, Applicant submits that claims 1-2, 5-23, 26-29, 32-41, 44-47 and 50-55 are patentably distinguishable over Duvillier. Accordingly, Applicant requests that the Examiner reconsider and remove the §102(e) rejection of claims 1-2, 5-23, 26-29, 32-41, 44-47 and 50-55.

Rejections Under 35 U.S.C. § 103

Claims 3-4, 24-25, 30-31, 42-43 and 48-49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Duvillier and Tarim, U.S. Patent No. 6,513,041.

As summarized above, all of the independent claims are patentable over Duvillier. The Tarim reference does nothing to obviate the deficiencies of Duvillier discussed above. Accordingly, claims 3-4, 24-25, 30-31, 42-43 and 48-49 are allowable by virtue of their dependency from allowable base claims 1, 19, 28, 40 and 46 respectively, as well as for the subject matter they separately recite. Thus, it is respectfully requested that the rejections of claims 3-4, 24-25, 30-31, 42-43 and 48-49 under 35 U.S.C. §103(a) be withdrawn.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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